

1 WHAT IS CLAIMED IS:

2 1. An accessory attachment for a rotary power hand tool of the  
3 type which has a housing with a substantially cylindrical nose portion, a motor  
4 having an output shaft with a mounting coupling for receiving a drive shaft  
5 extending forwardly from the nose portion, and being concentric therewith, said  
6 attachment comprising:

7 a housing having an output shaft configured to drive a rotating tool,  
8 said housing having an input shaft configured to couple with the drive shaft, such  
9 that said motor output shaft, drive shaft and input shaft are aligned on a common  
10 axis, said housing having a mounting collar with a substantially cylindrical inside  
11 surface sized to slidably fit snugly on the nose portion; and

12 a thin annular cylindrical layer of resilient material located between  
13 said housing cylindrical inside surface and the nose portion.

1 2. An attachment as defined in claim 1 further comprising an  
2 annular retention ring disposed axially inwardly from the end of said mounting  
3 collar on said inside surface of said mounting collar.

1 3. An attachment as defined in claim 1 wherein said layer has a  
2 thickness within the range of about 0.6mm to about 2.0mm

1                   4.     An attachment as defined in claim 1 wherein said layer  
2 maintains alignment of said motor output shaft, said drive shaft and said input  
3 shaft at rotational speeds as high as 35,000 rpm.

1                   5.     An attachment as defined in claim 1 wherein said resilient  
2 material reduces vibration that is caused by misalignment of said motor output  
3 shaft, said drive shaft and said input shaft.

1                   6.     And attachment as defined in claim 1 wherein said resilient  
2 material obviates the need for close manufacturing tolerances.

1                   7.     An attachment as defined in claim 1 wherein said resilient  
2 material obviates the need for high manufacturing tolerances of coupling elements.

1                   8.     An attachment as defined in claim 1 wherein said housing  
2 comprises glass-filled nylon.

1                   9.     An attachment as defined in claim 1 wherein said resilient  
2 material comprises a thermoplastic elastomer.

1                   10.    An attachment as defined in claim 1 wherein said resilient  
2 material is secured to said substantially cylindrical inside surface of said mounting  
3 collar by injection molding.

1                   11.    An attachment as defined in claim 1 wherein said mounting  
2 collar includes a pair of slots.

1                   12.    An attachment as defined in claim 1 wherein said mounting  
2 collar comprises first and second annular flanges separated by a annular groove.

1                   13.    An attachment as defined in claim 12 further comprising an  
2 annular clamp disposed around at least a portion of said annular groove.

1                   14.    An attachment as defined in claim 1 wherein the nose portion  
2 includes an annular groove.

1                   15.    An attachment as defined in claim 1 wherein said mounting  
2 collar includes an annular rib around at least a portion of an internal  
3 circumference.

1                   16.    An attachment as defined in claim 1 wherein said mounting  
2 collar includes a radial tab extending therefrom.

1                    17.    An attachment for a rotary hand tool of the type which has an  
2    outer enclosure with a nose portion, a tool holder rotating about an axis, and a bit  
3    mounted in the tool holder for engaging a work surface, the bit being of the type  
4    which has a long narrow cylindrical shape with an outer cutting surface for  
5    engaging a work piece, the cutting surface extending at least throughout a portion  
6    of the length of the bit, said attachment comprising:

7                    housing means for receiving the nose portion;

8                    retention means for frictionally retaining the nose portion;

9                    locking means for locking the nose portion within the housing  
10   means.

1                    18.    An attachment as defined in claim 17 wherein said retention  
2    means includes a plastic ring molded within said housing means.

1                    19.    An attachment as defined in claim 17 where said retention  
2    means includes an annular rib disposed within said housing and an annular groove  
3    disposed on the nose portion.

1                    20.    An attachment as defined in claim 17 wherein said locking  
2    means includes an annular groove disposed around a circumference of said  
3    housing means.

1                    21.    An attachment as defined in claim 20 wherein said locking  
2 means includes an annular clamp configured to lockingly engage said annular  
3 groove.

1                    22.    An attachment as defined in claim 20 wherein said  
2 circumference of said housing means includes a pair of grooves.